Flom Test Labs
EMI, EMC, RF Testing Experts Since 1963
toll-free: (866) 311-3268
fax: (480) 926-3598
http://www.flomlabs.com
info@flomlabs.com

Date: October 19, 2007

Applicant:
Telerad, SA
2, avenue de la Butte-Aux-Cailles
64603 Anglet Cedex, France

Attention of:
Patrice Mariotte
Ph: +33 5 59 58 55 00
Email: P.Mariotte@telerad.fr
Brian Koosmann
Engineering Manager, Technical Systems,
Honeywell International
Ph: 763-957-3053
email: brian.koosmann@honeywell.com

Equipment: Differential GPS
FCC ID: VR4-EM9009
FCC Rules: Part 87

Gentlemen:

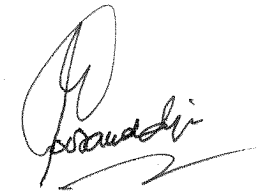
Enclosed please find your copy of the Engineering Test Report for which you are subject to the restrictions as listed on the attached summary.

As you know, the FCC, after a TCB issues a Grant, still has 30 days to review a submission and request added information. It is your decision whether or not to market the equipment subject to a possible recall before the end of the 30 days.

If your equipment is still retained by us, it will be returned to you 30 days after approval is achieved. Our invoice for services has been directed to your Accounts Payable Department.

Should you need any clarification, just fax or phone. Thank you again for this order - it has been a pleasure to be of service.

Sincerely yours,



Hoosamuddin S. Bandukwala, Lab Director

enclosure(s)
HSB/je

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Memo

Date: October 19, 2007

Applicant: Telerad, SA
2, avenue de la Butte-Aux-Cailles
64603 Anglet Cedex, France

Equipment: Differential GPS
FCC ID: VR4-EM9009

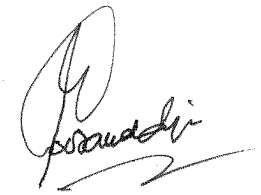
Please note that the enclosed Reports reflect the results of tests performed to the currently published Federal Communications Commissions Rules and Regulations.

Should the FCC's Examiners' interpretations request new and unpublished requirements, we will be pleased to provide them. We will invoice you accordingly, i.e. for the time spent on re-testing, providing the amended pages and/or Reports and for the time necessary to be spent on electronic filing. We will of course provide you with copies of any of the additions.

We regret any added expense to the Applicants, but of late the FCC continues to change their requirements without any prior written publication and/or notices.

As in the past, we will continue to provide all liaison with the FCC necessary for the successful conclusion of your project and the receipt of your Grant of Equipment Authorization.

Sincerely yours,



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Summary of Restrictions

1. All submissions to the FCC are subject to **their** Examiner's interpretation.

2. Please allow from 60 to 90 days before hearing from the FCC with regard to any submission.

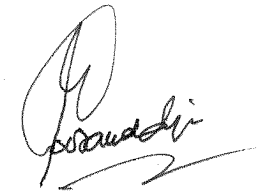
3. The FCC can set aside any action; modify or set aside any action, within 30 days. (FCC Rule 1.108, 1.113).

4. Under Rule 2.803, if device is not type accepted/certificated then it must **not** be sold, leased, offered for sale, imported, shipped or distributed or advertised for sale.

5. FCC can revoke its certificates at any time if the equipment does not meet or **continue** to meet their Rules. (Rule Parts 2.927, 2.939).

6. FCC can request a sample at any time (2.936).

M. Flom Associates, Inc.



Hoosamuddin S. Bandukwala, Lab Director

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fax: (480) 926-3598
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info@flomlabs.com

Date: October 19, 2007

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Telerad, SA
Equipment: Differential GPS
FCC ID: VR4-EM9009
FCC Rules: 87

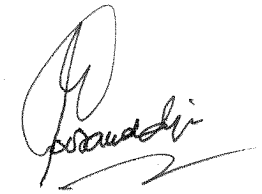
Gentlemen:

On behalf of the Applicant, enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, the whole for approval of the referenced equipment as shown.

Filing fees are attached.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,



Hoosamuddin S. Bandukwala, Lab Director

enclosure(s)
cc: Applicant
HSB/je

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Transmitter Certification

of

Model:

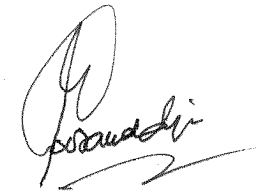
to

Federal Communications Commission

Rule Part(s) 87

Date of report: October 19, 2007

On the Behalf of the Applicant:	Telerad, SA
At the Request of:	Telerad, SA 2, avenue de la Butte-Aux-Cailles 64603 Anglet Cedex, France
Attention of:	Patrice Mariotte Ph: +33 5 59 58 55 00 Email: P.Mariotte@telerad.fr Brian Koosmann Engineering Manager, Technical Systems, Honeywell International Ph: 763-957-3053 email: brian.koosmann@honeywell.com



Supervised by: Hoosamuddin S. Bandukwala, Lab Director

List of Exhibits

(FCC **Certification** (Transmitters) - Revised 9/28/98)

Applicant: Telerad, SA

FCC ID: VR4-EM9009

By Applicant:

1. Letter of Authorization

2. Confidentiality Request: 0.457 And 0.459

3. Identification Drawings, 2.1033(c)(11)
   - Label
   - Location of Label
   - Compliance Statement
   - Location of Compliance Statement

4. Photographs, 2.1033(c)(12)

5. Documentation: 2.1033(c)
   - (3) User Manual
   - (9) Tune Up Info
   - (10) Schematic Diagram
   - (10) Circuit Description
   - Block Diagram
   - Parts List
   - Active Devices

6. MPE/SAR Report

By F.T.L.:

A. Testimonial & Statement of Certification

The Applicant has been cautioned as to the following:

15.21 **Information to the User**.

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.27(a) **Special Accessories**.

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

Flom Test Labs
EMI, EMC, RF Testing Experts Since 1963

Testimonial
and
Statement of Certification

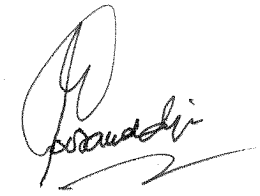
This is to Certify:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.

2. **That** the technical data supplied with the application was taken under my direction and supervision.

3. **That** the data was obtained on representative units, randomly selected.

4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.



Certifying Engineer: Hoosamuddin S. Bandukwala, Lab Director

Flom Test Labs
3356 North San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
(866) 311-3268 phone, (480) 926-3598 fax

Table of Contents

Required information per ISO 17025-2005, paragraph 5.10.2:

a) **Test Report**

b) Laboratory: Flom Test Lab
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044-A) Chandler, AZ 85225

c) Report Number: d07a0008

d) Client: Honeywell International
8840 Evergreen Blvd.
Coon Rapids, MN 55433-6040

e) Identification:

EUT Description: Differential GPS

f) EUT Condition: Not required unless specified in individual tests.

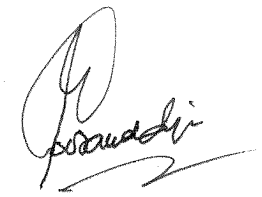
g) Report Date: October 19, 2007
EUT Received:

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with FTL internal quality manual.

m) Supervised by:



Hoosamuddin S. Bandukwala, Lab Director

n) Results: The results presented in this report relate only to the item tested.

o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

Accessories used during testing:

Type	Quantity	Manufacturer	Model	Serial No.	FCC ID

Sub-part 2.1033(c)(14):

Test and Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2, Sub-part J, Sections 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1079, 2.1051, 2.1053, 2.1055, 2.1057 and the following individual Parts:

x 87 – Aviation Services

Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-2003 and TIA-603-C-2004. Unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst-case measurements.

A2LA

"A2LA has accredited Flom Test Labs, Inc. Chandler, AZ for technical competence in the field of Electrical testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO 17025:2005 'General Requirements for the Competence of Testing and Calibration Laboratories' and any additional program requirements in the identified field of testing."

Please refer to www.a2la.org for current scope of accreditation.

Certificate number: 2152.01

List of General Information Required for Certification

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and to

87Sub-part 2.1033

(c)(1):

Name and Address of Applicant: Honeywell International
8840 Evergreen Blvd.
Coon Rapids, MN 55433-6040

Manufacturer: Honeywell International
8840 Evergreen Blvd.
Coon Rapids, MN 55433-6040

(c)(2): **FCC ID**: VR4-EM9009

Model Number: EM-9009

(c)(3): **Instruction Manual(s):**

Please see attached exhibits

(c)(4): **Type of Emission**: 14K0G7D

(c)(5): **Frequency Range, MHz**: 108 to 118

(c)(6): **Power Rating, Watts**: 85.4 W

____ Switchable ____ Variable __x__ N/A

FCC Grant Note:

(c)(7): **Maximum Power Rating, Watts**: N/A

DUT Results: Passes ___x___ Fails _____

Subpart 2.1033 (continued)

(c)(8): Voltages & currents in all elements in final RF stage, including final transistor or solid-state device:

Collector Current, A	=	per manual
Collector Voltage, Vdc	=	per manual
Supply Voltage, Vdc	=	24

(c)(9): **Tune-Up Procedure**:

Please see attached exhibits

(c)(10): **Circuit Diagram/Circuit Description**:

Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

Please see attached exhibits

(c)(11): **Label Information**:

Please see attached exhibits

(c)(12): **Photographs**:

Please see attached exhibits

(c)(13): **Digital Modulation Description**:

___ Attached Exhibits
_x_ N/A

(c)(14): **Test and Measurement Data**:

Follows

Test Results Summary

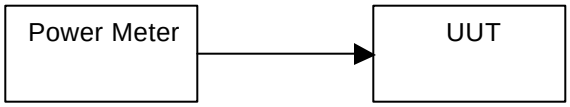
Specification	Test Name	Pass, Fail, N/A	Comments
87.131	Peak Output Power	Pass	
87.139	Conducted Spurious Emissions	Pass	
87.139	Field Strength of Spurious Radiation	Pass	
87.135	Occupied Bandwidth	Pass	
87.133	Frequency Stability Temperature	Pass	
87.133	Frequency Stability Voltage	Pass	

Name of Test: Carrier Output Power (Conducted)
Specification: 87.131
Test Equipment: i00024, i00228, i00231, i00317

Test Procedure

The UUT was connected directly to a power meter input. The peak readings were taken and the result was then compared to the limit.

Test Setup



Transmitter Peak Output Power

Tuned Frequency MHz	Recorded Measurement
108.025	83.2 W
113.000	83.6 W
117.950	85.4 W

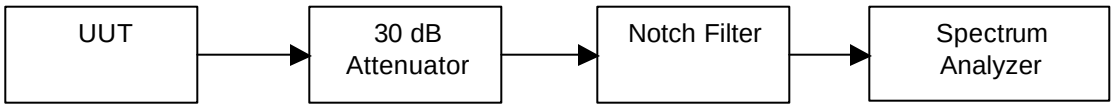
Name of Test: Unwanted Emissions (Transmitter Conducted)
Specification: 87.139
Test Equipment: i00024, i00231, i00330

Test Procedure

The UUT was connected to a spectrum analyzer through a power attenuator and notch filter. The reference level was offset to account for the power attenuator required for safe observation of the UUT output. A notch filter was tuned to suppress the fundamental carrier allowing for accurate measurement of any spurious emissions. The frequency range from 30 Hz to the 10th harmonic of the fundamental transmitter was observed.

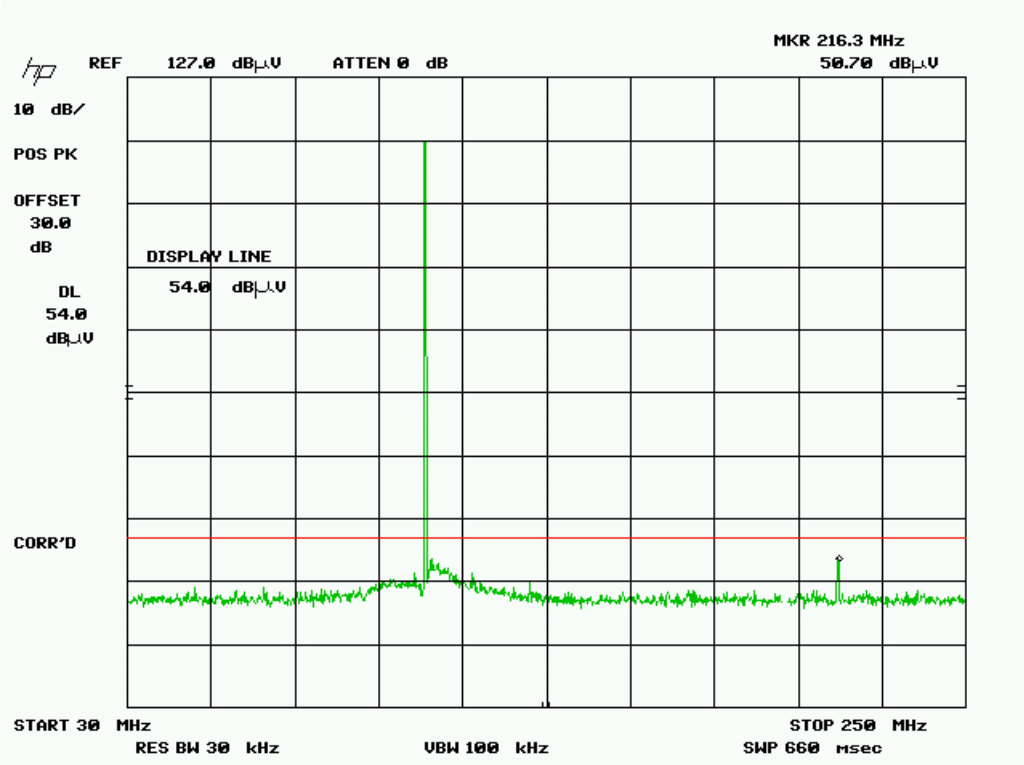
Only the worst case is recorded in the Conducted Spurious Emissions Summary Test Table.

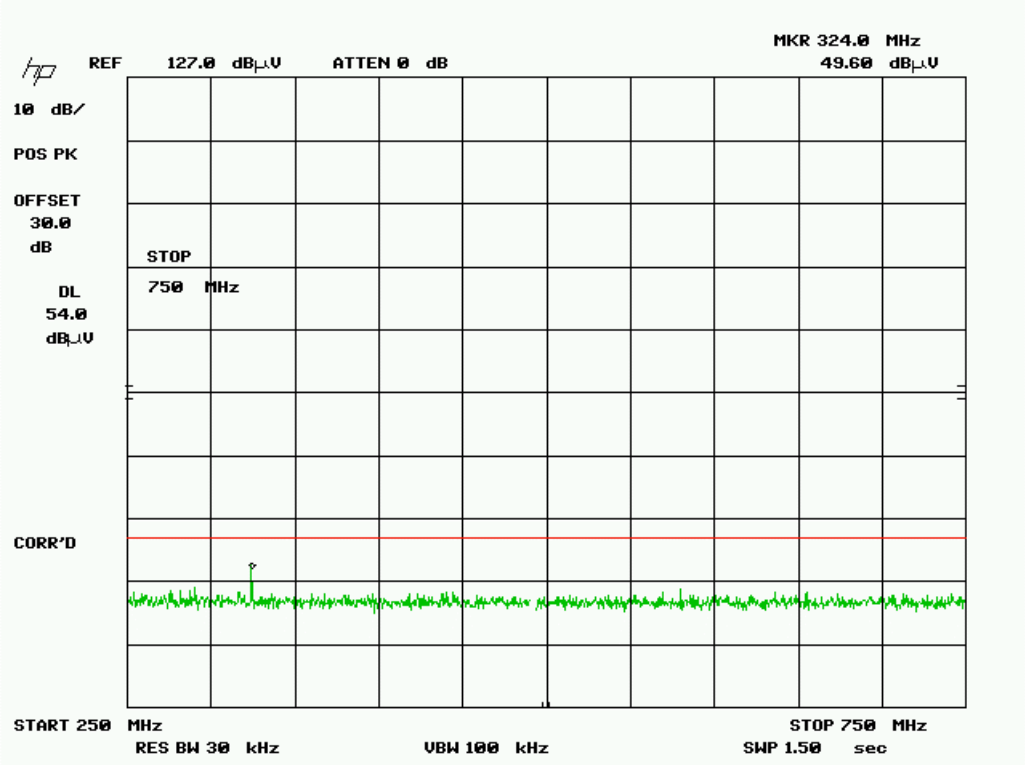
Test Setup

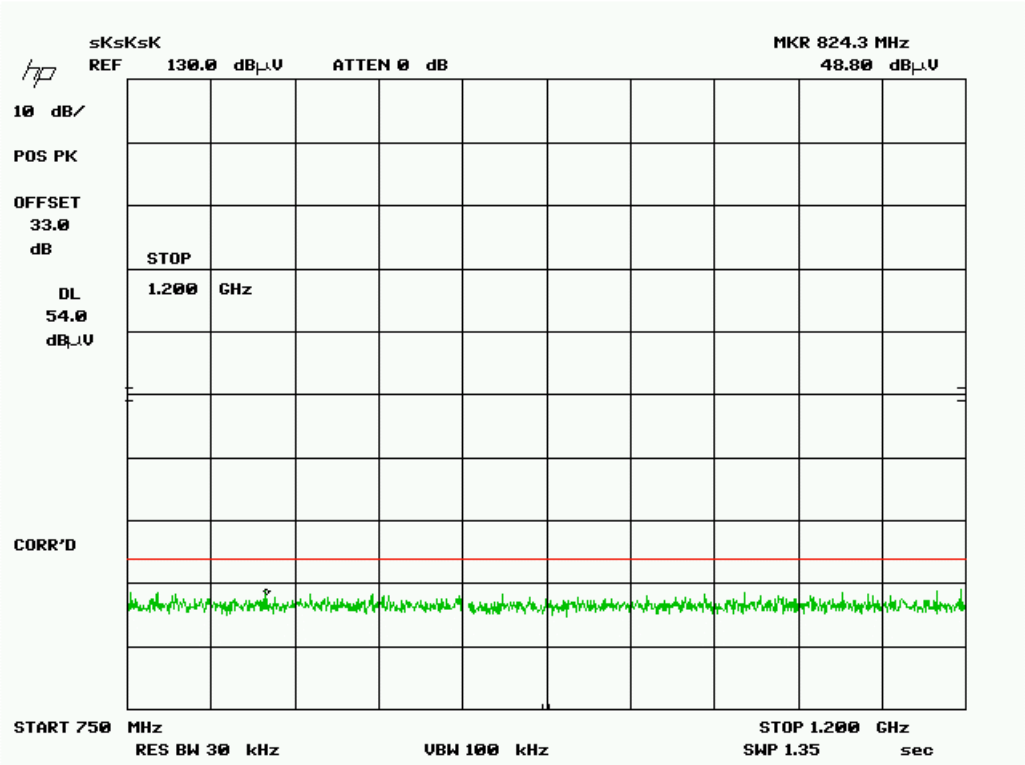


Conducted Spurious Emissions Summary Test Table

Tuned Frequency (MHz)	Emission Frequency (MHz)	Recorded Measurement	Specification Limit	Result
108.025	216.3	50.7 dBµV	-54 dBµV	Pass




MKR 324.0 MHz
REF 127.0 dBµV
ATTEN 0 dB
49.60 dBµV
10 dB/
POS PK
OFFSET
30.0
dB
STOP
750 MHz
DL
54.0
dBµV
CORR'D
START 250 MHz
STOP 750 MHz
RES BW 30 kHz
VBW 100 kHz
SWP 1.50 sec


sKsKsK
MKR 824.3 MHz
REF 130.0 dBµV
ATTEN 0 dB
48.80 dBµV
10 dB/
POS PK
OFFSET
33.0
dB
STOP
1.200 GHz
DL
54.0
dBµV
CORR'D
START 750 MHz
STOP 1.200 GHz
RES BW 30 kHz
VBW 100 kHz
SWP 1.35 sec

Name of Test: Field Strength of Spurious Radiation
Specification: 87.139
Test Equipment: i00024, i00048, i00049, i00050, i00051, i00114, i00267

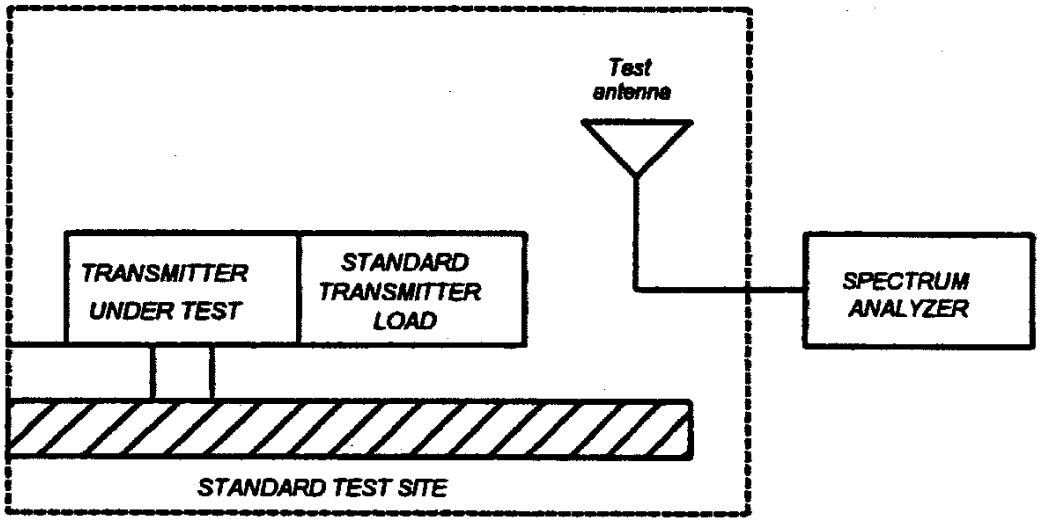
Measurement Procedure

Definition:
Radiated spurious emissions are emissions from the equipment when transmitting into a non-radiating load on a frequency or frequencies that are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

Method of Measurement:
A) Connect the equipment as illustrated

B) Adjust the spectrum analyzer for the following settings:
1) Resolution Bandwidth 100 kHz (<1 GHZ), 1 MHZ (> 1GHz).
2) Video Bandwidth = 3 times Resolution Bandwidth, or 30 kHz (22.917)
3) Sweep Speed ≤2000 Hz/second
4) Detector Mode = Mean or Average Power

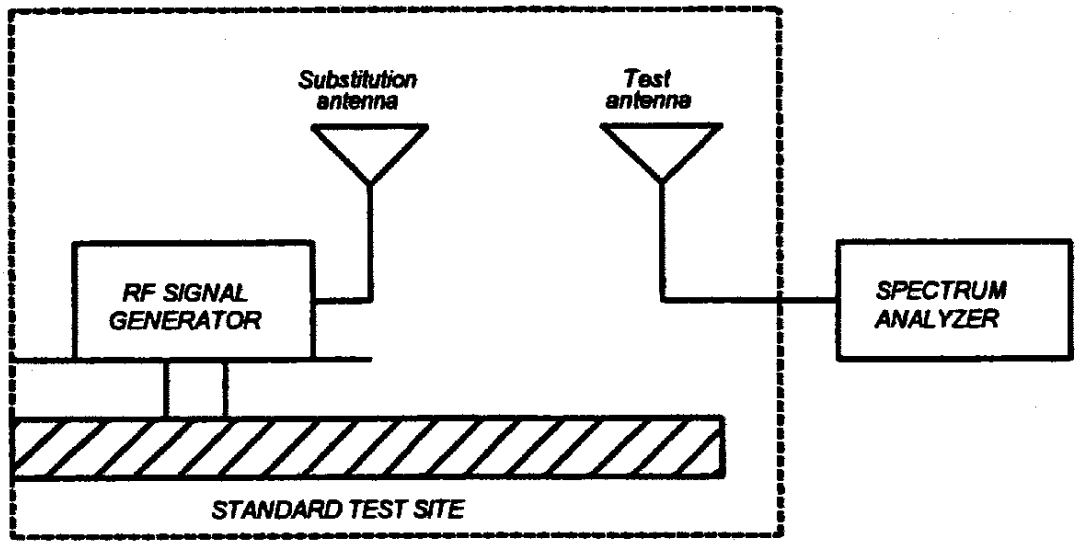
C) Place the transmitter to be tested on the turntable in the standard test site. The transmitter is transmitting into a non-radiating load that is placed on the turntable. The RF cable to this load should be of minimum length.



D) For each spurious measurement the test antenna should be adjusted to the correct length for the frequency involved. This length may be determined from a calibration ruler supplied with the equipment. Measurements shall be made from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier, except for the region close to the carrier equal to ± the test bandwidth (see section 1.3.4.4).

E) For each spurious frequency, raise and lower the test antenna from 1 m to 4 m to obtain a maximum reading on the spectrum analyzer with the test antenna at horizontal polarity. Repeat this procedure to obtain the highest possible reading. Record this maximum reading.

F) Repeat step E) for each spurious frequency with the test antenna polarized vertically.



G) Reconnect the equipment as illustrated.

H) Keep the spectrum analyzer adjusted as in step B).

I) Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter. At lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3 m above the ground.

J) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.

K) Repeat step J) with both antennas vertically polarized for each spurious frequency.

L) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps J) and K) by the power loss in the cable between the generator and the antenna and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna.

M) The levels recorded in step L) are absolute levels of radiated spurious emissions in dBm. The radiated spurious emissions in dB can be calculated by the following:

Radiated spurious emissions dB =

$10\log_{10}$(TX power in watts/0.001) – the levels in step l)

Radiated Spurious Emissions

Tuned Freq (MHz)	Emission Freq (MHz)	Peak Monitored Level (dBuV/m)	Correction Factor (dB)	Corrected EIRP Level (dBm)
108.025	432.100	14.0	19.6	-61.6
108.025	540.125	14.1	21.0	-60.2
108.025	648.150	14.0	23.0	-58.2
108.025	756.175	14.2	24.7	-56.4
108.025	972.225	14.0	27.1	-54.1
108.025	1080.250	11.5	27.5	-56.3

Tuned Freq (MHz)	Emission Freq (MHz)	Peak Monitored Level (dBuV/m)	Correction Factor (dB)	Corrected EIRP Level (dBm)
117.950	236.064	22.0	13.8	-59.4
117.950	354.014	19.6	17.8	-57.8
117.950	471.800	14.0	20.3	-61.0
117.950	589.750	15.8	22.2	-57.2
117.950	707.700	14.0	23.4	-57.9
117.950	825.650	14.0	25.2	-56.1

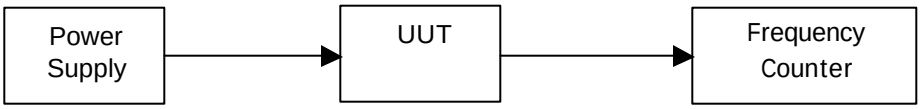
No other emissions were detectable.

Name of Test: Frequency Stability (Temperature Variation)
Specification: 87.133
Equipment: A203711, A203547, AV57131, AV3668, AV3705

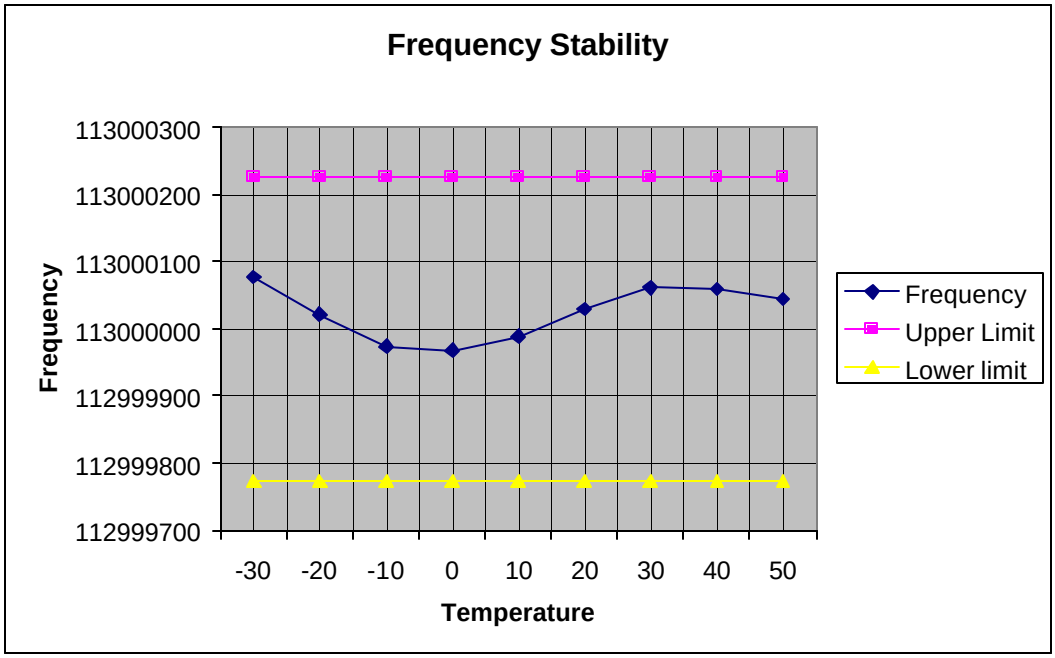
Test Procedure

The UUT placed in an environmental test chamber and the temperature was varied from -30ºC to 50ºC in 10ºC increments. A frequency counter was used to monitor the output frequency at temperature increment. The limit of 2PPM was met. The client supplied data for this test.

Test Setup



Test Results



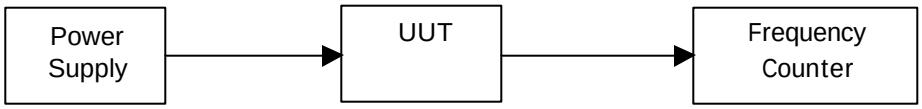
Temperature	Frequency	Upper Limit	Lower limit	Result
-30	113000077	113000226	112999774	Pass
-20	113000022	113000226	112999774	Pass
-10	112999974	113000226	112999774	Pass
0	112999968	113000226	112999774	Pass
10	112999989	113000226	112999774	Pass
20	113000029	113000226	112999774	Pass
30	113000061	113000226	112999774	Pass
40	113000059	113000226	112999774	Pass
50	113000044	113000226	112999774	Pass

Name of Test: Frequency Stability (Voltage Variation)
Specification: 87.133
Equipment: i00024, i00231, i00251

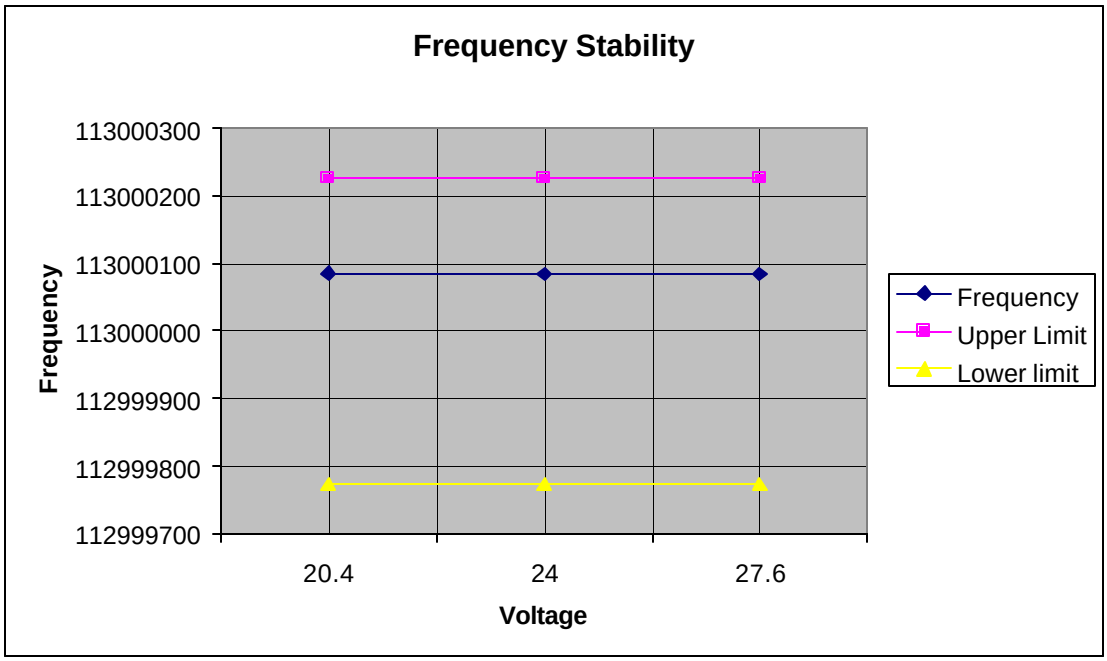
Test Procedure

The UUT powered with a variable DC power supply. The output frequency was monitored with a frequency counter while the voltage was varied from –15% to +15% of the nominal voltage of 24 VDC. The limit of 2PPM was met.

Test Setup



Test Results



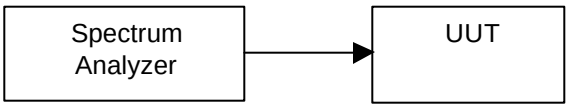
Voltage	Frequency	Upper Limit	Lower limit	Result
20.4	113000085	113000226	112999774	Pass
24	113000084	113000226	112999774	Pass
27.6	113000084	113000226	112999774	Pass

Name of Test: Necessary Bandwidth and Emission Bandwidth
Specification: 87.135
Test Equipment i00024, i00029, i00231

Test Procedure

The UUT was connected directly to a spectrum analyzer. The Span was set wide enough to capture the entire transmit spectrum and the resolution bandwidth was set to at least 1% of the span. The analyzer was set to max hold and when the entire spectrum was captured the occupied bandwidth was measured to verify the bandwidth met the specification.

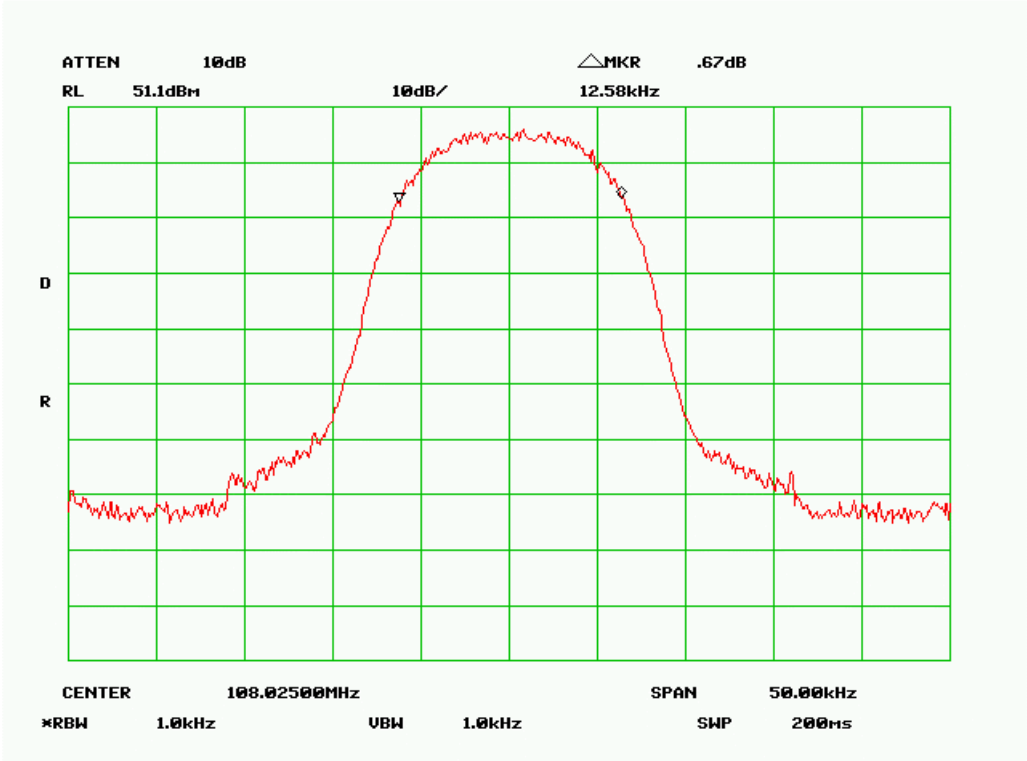
Test Setup



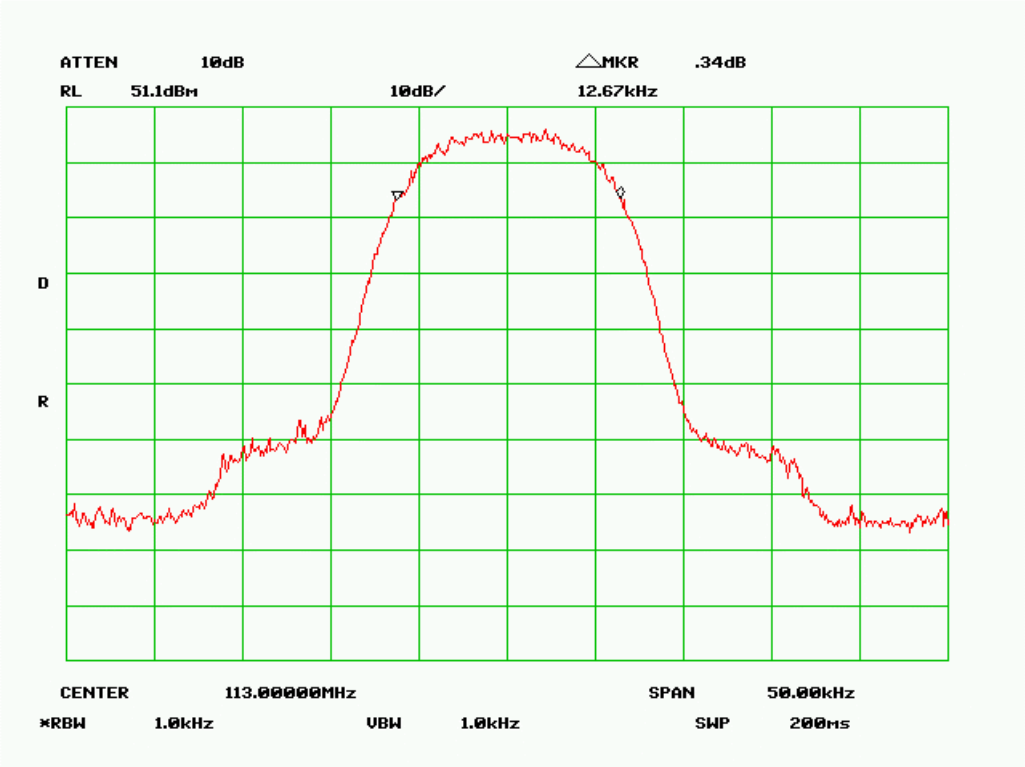
Occupied Bandwidth Summary

Frequency MHz	Recorded Measurement	Specification Limit	Result
108.025	12.58 KHz	25 KHz	Pass
113.000	12.67 KHz	25 KHz	Pass
117.950	12.58 KHz	25 KHz	Pass

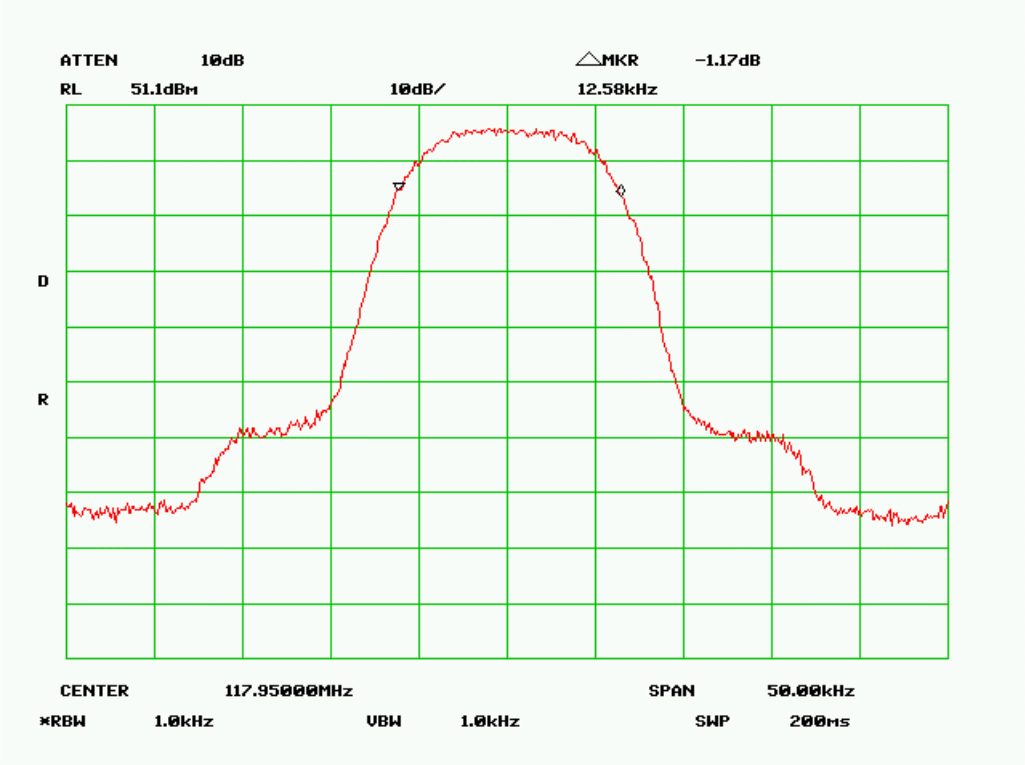
Occupied Bandwidth 108.025 MHz



Occupied Bandwidth 113.000 MHz



Occupied Bandwidth 117.950 MHz



Test Equipment Utilized

Asset#	Manufacturer	Model	Serial Number	Calibration Due
i00024	HP	6012A	2213A-01034	N/A
i00029	HP	8563E	3213A00104	3/9/2008
i00048	HP	85662A	2511AD1467	8/18/2008
i00049	HP	8566B	2511AD1467	8/18/2008
i00050	HP	85685A	2510A00185	8/18/2008
i00051	HP	85650A	2521A00647	8/18/2008
i00114	Thermolane	8201	8321	N/A
i00228	HP	E4418B	GB39512470	9/6/2007
i00231	Pasternek	PE7021-30dB		N/A
i00251	HP	53152A	US39270237	5/3/2008
i00267	Schnaffer	CBL611C	2910	9/26/2007
i00317	HP	8481A	3318A28077	9/7/2008
i00330	HP	8566B	3138A07426	4/16/2008

Equipment From Off Site Testing

Asset#	Mfg	Model	Cal Due Date
A203711	Thermotron	S-16	Aug 16th 2008
A203547	Agilent	53151A	Nov 14th 2007
AV57131	HP	62745B	N/A
AV3668	Fluke	89IV	Nov 15th 2008
AV3705	Tenuline	8322	N/A

In addition to the above listed equipment standard RF cables and connectors were utilized. Proper operation was verified prior to testing.

END OF TEST REPORT